



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:

PAUL L. POOL
WILLIAM H. GOWAN

Filed: March 26, 1998

Serial No. 09/517,383

For: PROTECTION OF PIPELINE
JOINT CONNECTIONS

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Art Unit: 3627

Examiner: Teri Pham Luu

Attorney Docket No.: 85356.0011

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CLAIMS AS AMENDED 11/21/ 01
CHANGES FROM PREVIOUS VERSION

17. (Three times amended) A cover for attachment at positions protecting exposed pipeline joint sections on weight coated offshore underwater pipelines comprising:

a pliable cover material for attachment at positions overlapping adjacent end portions of the weight coat, completely enclosing the exposed pipe joint section, and sealed in place forming an annular space around the pipe;

said cover material comprising a sheet of material wrapped in a cylindrical shape and having overlapping side edges sealed together to form said annular space;

said annular space between the exposed pipeline and the cover material filled with a joint filling material of a high density open celled polyurethane foam, formed by reacting polyurethane chemicals inside the cover material; and

said cover material including an opening formed in the sheet for injecting the joint filling material into the annular space some and allow entry of moisture into the polyurethane foam.

19. The cover of claim 17 wherein the pliable cover material is formed from polyethylene.

22. The cover of claim 17, wherein the open celled polyurethane foam of the joint filling material absorbs moisture when underwater to increase ballast of the pipeline.

27. The cover of claim 17, wherein the cover material is between about 0.02 inches to about 0.5 inches in thickness.

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28. The cover of claim 17, wherein the opening in the cover material is sized to receive a mixing head for injecting the polyurethane chemicals and prevent escape thereof from the cover material.

29. (New) A cover attached on weight coated offshore underwater pipelines at positions for protecting exposed pipeline joint sections of the pipeline, comprising:

a pliable cover material for attachment at positions overlapping adjacent end portions of the weight coat, completely enclosing the exposed pipe joint section, and sealed in place forming an annular space around the pipe;

said cover material comprising a sheet of material wrapped in a cylindrical shape and having overlapping side edges sealed together to form said annular space;

said annular space between the exposed pipeline and the cover material filled with a joint filling material of a high density open celled polyurethane foam, formed by reacting polyurethane chemicals inside the cover material; and

said cover material including an opening formed in the sheet for injecting the joint filling material into the annular space and allow entry of moisture into the polyurethane foam.

30. (New) The cover of claim 29, wherein the pliable cover material is formed from polyethylene.

31. (New) The cover of claim 29, wherein the open celled polyurethane foam of the joint filling material absorbs moisture when underwater to increase ballast of the pipeline.

32. (New) The cover of claim 29, wherein the cover material is between about 0.02 inches to about 0.5 inches in thickness.

33. (New) The cover of claim 29, wherein the opening in the cover material is sized to receive a mixing head for injecting the polyurethane chemicals and prevent escape thereof from the cover material.

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